NPS-GSBPP-09-009

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

Managing the Services Supply Chain in the Department of Defense: An Empirical Study of Current Management Practices

19 August 2009

by

Dr. Aruna U. Apte, Assistant Professor

Dr. Uday M. Apte, Professor, and

Dr. Rene G. Rendon, Associate Professor

Graduate School of Business & Public Policy

Naval Postgraduate School

Prepared for: Naval Postgraduate School, Monterey, California 93943

Naval Postgraduate School
Monterey, California

Daniel T. Oliver
President

Leonard A. Ferrari
Provost

The Acquisition Chair, Graduate School of Business & Public Policy, Naval Postgraduate School supported the funding of the research presented herein.

The report was prepared by:

_____
Aruna U. Apte, Assistant Professor
Graduate School of Business & Public Policy

_____
Uday M. Apte, Professor
Graduate School of Business & Public Policy

_____
Rene G. Rendon, Associate Professor
Graduate School of Business & Public Policy

Reviewed by:

_____
William R. Gates, Ph.D.
Dean, Graduate School of Business & Public Policy

Released by:

_____
Karl van Bibber, Ph.D.
Vice President and
Dean of Research

REPORT DOCUMENTATION PAGE

Form approved
OMB No 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	19 August 2009	1 October 2007 through 30 September 2008

4. TITLE AND SUBTITLE
Managing the Services Supply Chain in the Department of Defense: An Empirical Study of Current Management Practices

5. FUNDING

6. AUTHOR (S)
Aruna U. Apte, Uday M. Apte, and Rene G. Rendon

7. PERFORMING ORGANIZATION NAME (S) AND ADDRESS (ES)
NAVAL POSTGRADUATE SCHOOL
GRADUATE SCHOOL OF BUSINESS AND PUBLIC POLICY
555 DYER ROAD
MONTEREY, CA 93943-5103

8. PERFORMING ORGANIZATION REPORT NUMBER
NPS-GSBPP-09-009

9. SPONSORING/MONITORING AGENCY NAME (S) AND ADDRESS (ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT

This paper presents the results of our ongoing research on the management of services acquisition in the Department of Defense. In this empirical study we developed and used a web-based survey to collect data on the acquisition strategy, procurement methods, and contract types used at Air Force and Navy installations. Specifically, we studied the current management practices in such areas as life cycle approach, project management, organization/management structure, and training provided to services acquisition personnel.

We find that the majority of the services contracts awarded and administered conformed to our expectation. For example, most service contracts are competitively bid, fixed-priced awards without any type of contract incentive. However, we found that the Air Force and Navy use different contracting approaches—specifically in the areas of organizational level of acquisition offices (regional versus installation), the use of project teams, leaders of the acquisition effort (program personnel versus contracting officers), and managers of the services requirement (program personnel, contracting officers, and customer organizations). We analyzed the implications and impact of different approaches on the effectiveness of the contract management process and make recommendations on improving the management of services acquisition in the Department of Defense.

14. SUBJECT TERMS

Service Supply Chain, Services Acquisition, Service Lifecycle, Contract Management, Project Management, Program Management

15. NUMBER OF PAGES
59

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT: UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE: UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT: UNCLASSIFIED	20. LIMITATION OF ABSTRACT: UU

NSN 7540-01-280-5800

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

Abstract

This paper presents the results of our ongoing research on the management of services acquisition in the Department of Defense. In this empirical study we developed and used a web-based survey to collect data on the acquisition strategy, procurement methods, and contract types used at Air Force and Navy installations. Specifically, we studied the current management practices in such areas as life cycle approach, project management, organization/management structure, and training provided to services acquisition personnel.

We find that the majority of the services contracts awarded and administered conformed to our expectation. For example, most service contracts are competitively bid, fixed-priced awards without any type of contract incentive. However, we found that the Air Force and Navy use different contracting approaches—specifically in the areas of organizational level of acquisition offices (regional versus installation), the use of project teams, leaders of the acquisition effort (program personnel versus contracting officers), and managers of the services requirement (program personnel, contracting officers, and customer organizations). We analyzed the implications and impact of different approaches on the effectiveness of the contract management process and make recommendations on improving the management of services acquisition in the Department of Defense.

Keywords: Service Supply Chain, Services Acquisition, Service Lifecycle, Contract Management, Project Management, Program Management

THIS PAGE INTENTIONALLY LEFT BLANK

Acknowledgements

The authors are greatly thankful to RADM James Greene, USN (Ret), the NPS Acquisition Research Chair, for securing the sponsor funding for this research. We would also like to acknowledge and thank Keith Snider and Karey Shaffer for their efforts on behalf of the Acquisition Research Program in the Graduate School of Business and Public Policy of the Naval Postgraduate School. Finally, the authors like to thank numerous anonymous respondents of the web-based survey at various Navy and Air Force installations.

THIS PAGE INTENTIONALLY LEFT BLANK

About the Authors

Dr. Aruna Apte is an Assistant Professor in the department of Operations and Logistics Management, Graduate School of Business and Public Policy, at the Naval Postgraduate School, Monterey, California. She received her PhD in Operations Research from the *School of Engineering* at the *Southern Methodist University in Dallas, Texas*. Her earlier education includes a Master's in Mathematics and credits towards a PhD in Mathematics from *Temple University, Philadelphia*, *Pennsylvania*. She has taught in the *Cox School of Business, School of Engineering* and *the Department of Mathematics* at *Southern Methodist University*. She has over twenty years of experience in teaching operations management, operations research, and mathematics courses at the undergraduate and graduate levels in the resident and remote programs.

Apte has successfully completed various research projects involving applications of mathematical models and optimization techniques. Her research interests are in the areas of developing mathematical models and algorithms for complex, real-world operational problems especially in the area of humanitarian logistics and critical infrastructure networks using techniques of combinatorial optimization, network programming, and mixed-integer programming based on heuristic search methods. It is also important to her that her research is directly applicable to practical problems and has significant value-adding potential. Her research articles have been published in prestigious journals including *Naval Research Logistics, Production and Operations Management,* and *Interfaces.* She has published several articles in the *Acquisition Research Sponsored Report Series, GSBPP, NPS*. She also has a patent pending for "SONET Ring Designer Tool," created when she worked as a consultant for MCI.

Aruna Apte
Assistant Professor, Operations and Logistics Management
Graduate School of Business and Public Policy
Naval Postgraduate School
Monterey, CA 93943-5197
Tel: (831) 656-7583
E-mail: auapte@nps.edu

Dr. Uday Apte is Professor of Operations Management at the Graduate School of Business and Public Policy, Naval Postgraduate School, Monterey, CA. Before joining NPS, Uday taught at the *Wharton School, University of Pennsylvania*, Philadelphia, and at the *Cox School of Business, Southern Methodist University*, Dallas. He is experienced in teaching a range of operations management and management science courses in the Executive and Full-time MBA as well as the business undergraduate programs. His earlier education includes B. Tech. in Chemical Engineering from the *Indian Institute of Technology*, Bombay, India, MBA from the *Asian Institute of Management*, Manila, Philippines, and Ph.D. in Decision Sciences from The Wharton School, University of Pennsylvania, Philadelphia.

Uday is currently serving as the Vice President for Colleges, *Production and Operations Management Society* (POMS). In the past he has served as the founder and President of the POMS College of Service Operations, as a board member of POMS, and as guest editor of *Production and Operations Management* journal. Prior to his career in the academia, Uday worked for over ten years in managing operations and information systems in the financial services and utility industries. Since then he has consulted with several major US corporations and international organizations. His recent consulting engagements have focused on process improvement using Lean Six Sigma and development of operations strategy.

Areas of Dr. Apte's research interests include managing service operations, globalization of information-intensive services, supply chain management, and technology management. He has published over 40 research articles, five of which have won awards from professional societies. His research articles have been published in prestigious journals including *Management Science, Interfaces, Production and Operations Management, Journal of Operations Management, Decision Sciences, IIE Transactions, Interfaces,* and *MIS Quarterly*. He has co-authored two books, *Manufacturing Automation* and*, Managing in the Information Economy.*

Uday Apte, PhD
Professor
Graduate School of Business and Public Policy
Naval Postgraduate School
Monterey, CA 93943-5197
Tel: (831) 656-3598
E-mail: umapte@nps.edu

Dr. Rene G. Rendon is a nationally recognized authority in the areas of supply management, contract management, and project management. He is currently on the faculty of the United States Naval Postgraduate School, where he teaches in the MBA and Master of Science programs. Prior to his appointment at the Naval Postgraduate School, he served for more than 22 years as an acquisition and contracting officer in the United States Air Force, retiring at the rank of lieutenant colonel. His Air Force career included assignments as a warranted contracting officer for the Peacekeeper ICBM, Maverick Missile, C-20 (Gulfstream IV), and the F-22 Raptor. He was also a contracting squadron commander for an Air Force pilot training base and the director of contracting for the Air Force's Space-based Infrared satellite system, and the Evolved Expendable Launch Vehicle rocket program.

Rendon has taught contract management courses for the UCLA Government Contracts program; he was also a senior faculty member for the Keller Graduate School of Management, where he taught MBA courses in project management and contract management. He is a graduate of the US Air Force Squadron Officer School, Air Command and Staff College, Air War College, and the Department of Defense Systems Management College. Rendon is Level III certified in both Program Management and Contracting under the *Defense Acquisition Workforce*

Improvement Act (*DAWIA*) program. He is also a Certified Professional Contracts Manager (CPCM) with the National Contract Management Association (NCMA), a Certified Purchasing Manager (C.P.M.) with the Institute for Supply Management (ISM), and a certified Project Management Professional (PMP) with the Project Management Institute (PMI). He has received the prestigious Fellow Award from NCMA, and he was recognized with the United States Air Force Outstanding Officer in Contracting Award. He has also received the NCMA National Education Award and the NCMA Outstanding Fellow Award. Dr. Rendon is a member of the ISM Certification Committee as well as on the Editorial Review Board for the ISM *Inside Supply Management* magazine. He is a member of the NCMA Board of Advisors as well as associate editor for its *Journal of Contract Management.* Dr. Rendon's publications include *Government Contracting Basics* (2007), *U. S. Military Program Management: Lessons Learned & Best Practices* (2007), and *Contract Management Organizational Assessment Tools* (2005). He has also published scholarly articles in the *Contract Management* magazine, the *Journal of Contract Management*, the *Program Manager* magazine, the *Project Management Journal*, and the *PM Network* magazine. He is a frequent speaker at universities and professional conferences and provides consulting to both government and industry.

Rene G. Rendon, D.B.A
Associate Professsor
Graduate School of Business and Public Policy
Naval Postgraduate School
Monterey, CA 93945-5197
Tel: (831) 656-3464
E-mail: rgrendon@nps.edu

THIS PAGE INTENTIONALLY LEFT BLANK

NPS-GSBPP-09-009

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

Managing the Services Supply Chain in the Department of Defense: An Empirical Study of Current Management Practices

19 August 2009

by

Dr. Aruna U. Apte, Assistant Professor

Dr. Uday M. Apte, Professor, and

Dr. Rene G. Rendon, Associate Professor

Graduate School of Business & Public Policy

Naval Postgraduate School

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

1.0 Introduction 1

2.0 Current Research Focus 7

2.1 Development and Review of Survey Instrument 7

3.0 Survey Data and Preliminary Observations 13

3.1 Services Acquisition: Air Force Survey Results 13

3.2 Services Acquisition: Navy Survey Results 18

3.3 Program Management Issues for Both the Air Force and the Navy 21

4.0 Summary of Analysis 25

5.0 Recommendations 33

List of References 35

Initial Distribution List 41

THIS PAGE INTENTIONALLY LEFT BLANK

1.0 Introduction

Services acquisition in the US Department of Defense (DoD) has continued to increase in scope and dollars in the past decade. In fact, even considering the high value of weapon systems and large military items purchased in recent years, the DoD has spent more on services than on supplies, equipment and goods (Camm, Blickstein & Venzor, 2004). The acquired services presently cover a very broad set of service activities—including professional, administrative, and management support; construction, repair, and maintenance of facilities and equipment; information technology; research and development; and medical care.

As the DoD's services acquisition continues to increase in scope and dollars, DoD must give greater attention to proper acquisition planning, adequate requirements definition, sufficient price evaluation, and proper contractor oversight (GAO, 2002). Recently, the Director of Defense Procurement and Acquisition Policy (DPAP) has identified inappropriate use of services contracts in the DoD (Director, DPAP, 2007, March 2) and is planning to take actions to improve contracting for services throughout the Department (Director, DPAP, 2006, August 16). In many ways, the issues affecting services acquisition are similar to those affecting the acquisition of physical supplies and weapon systems. However, the unique characteristics of services, combined with the increasing importance of services acquisition, offer a unique and significant opportunity for research into the management of the service supply chain in the Department of Defense.

We have addressed the need for research in the area of services acquisition by undertaking a series of research projects. Thus far, we have completed two research projects; the current research is our third research project in this area.

The first research project was exploratory in nature, wherein we tried to understand the major challenges and opportunities in the service supply chain in the DoD (Apte, Ferrer, Lewis, & Rendon, 2006). As a part of this research study, we conducted in-depth case studies on acquisition of services in three different

organizations: Presidio of Monterey, Travis AFB and the Naval Support Detachment Monterey (NSDM). The major conclusions of that research are:

1. The Department of Defense's services acquisition has continued to increase in scope and dollars in the past decade. The GAO found that since FY 1999, the DoD's spending on services has increased by 66%; indeed, in FY 2003, the DoD spent over $118 billion—or approximately 57% of the DoD's total procurement dollars—on services (GAO, 2005, March). The DoD procures a variety of services, including both the traditional commercial services and services unique to defense. In terms of amount spent, the following four service categories together represent over 50% of total spending on services: (a) professional, administrative, and management support services, (b) construction, repair and maintenance of structure and facilities, (c) equipment maintenance, and (d) information technology services.

2. Presidio of Monterey (POM) has contracted maintenance of about 155 buildings and structures to Presidio Municipal Services Agency (PMSA), a consortium of the cities of Monterey and Seaside. The PMSA agreement has allowed the two cities to apply their expertise to routine municipal services and the Army to focus on its military mission. Through this partnership and contract with PMSA, the POM has realized a 41% reduction in expenses when compared with previous base operation costs and private contracts. We recommend that the DoD explore and evaluate the possibility of establishing such synergistic contractual relations with cities adjacent to other bases in support of their respective operations.

3. Proactive and frequent communications are essential for a successful services contract. We found a successful example of this at Travis AFB, where 60th CONS uses Business Requirement Advisory Groups (BRAGs) as the mechanism for conducting such communications. BRAGs are cross-functional teams made up of personnel representing the functional organizations involved as customers in the services contracts. These cross-functional teams plan and manage the service contracts throughout the service's lifecycle. As the DoD increases the use of centralized contracting organizations and regional contracts, the use of proactive and frequent communications will be even more essential for the successful management and performance of these contracts.

4. Visits and interviews at Travis AFB, Presidio of Monterey (POM), Naval Air Station Whidbey Island (NAS WI), and the Naval Support Detachment Monterey (NSDM) confirm the GAO's findings (GAO,

2005, June) that while the Army's and Navy's creation of centralized installation management agencies can potentially create efficiencies and improve the management of the facilities through streamlining and consolidation, implementation of these plans has so far met with mixed results in the quality and level of support provided to activities and installations.

5. The centralization of contracting offices and the use of regional contracts will result in additional dynamics for the DoD's acquisition of services. The Department's use of centralized contracting organizations and regional contracts will require even more proactive and frequent communications between the contracting organization and the customer. Although it is still too early to assess the effectiveness and efficiency of centralized contracting organizations and regional contracts, this research has indicated that centralization and regionalization of services contracts are growing trends in the DoD and will significantly change how services contracts are managed.

6. Given the unique characteristics of services (such as intangibility, co-production, diversity and complexity), establishing service specifications, and measuring and monitoring the quality of delivered services are inherently more complex processes than with manufactured goods. Hence, it is critical to have onboard a "knowledgeable client" and the necessary number of skilled contracting personnel to define the requirements and to supervise vendors and assure quality of outsourced services. The DoD has been aggressively complying with OMB's *Circular A-76*, which directs all federal government agencies "to rely on the private sector for needed commercial services" (OMB, 2003). This has resulted in dramatic growth in DoD spending on services, with a simultaneous downsizing of the DoD civilian and military acquisition workforce. We believe that the downsizing trend is not in sync with the critical need to have a necessary number of skilled contracting personnel onboard. This could mean that in the DoD's outsourced services, either the needs are not being fully satisfied, or the value for the money spent is not being realized.

7. As the DoD acquires more services than goods, the acquisition of services and the use of service contractors are becoming increasingly critical aspects of the DoD mission. However, the management infrastructure for the acquisition of services is less developed than that for the acquisition of products and systems. For example, there is a less-formal program management approach and lifecycle methodology for the acquisition of services, which is confirmed by the lack of standardization in the business practices associated with the services acquisition process. This results from the fact that the functional

> personnel currently managing the services programs are not considered members of the DoD acquisition workforce and are typically not provided acquisition training under *Defense Acquisition Workforce Improvement Act* (*DAWIA*) requirements.

Review of the current literature shows that the use of a well-defined, disciplined approach and infrastructure for the management of projects is critical for a project's success in meeting cost, schedule, and performance objectives (Kerzner, 2006). In the absence of a well-defined management infrastructure, project teams are left to create an ad-hoc approach to managing individual projects. Based on our research, we believe this is the current situation in many DoD services acquisition programs. Many critical services lack both a well-defined program management infrastructure and a lifecycle approach to services acquisition project management. This combination could jeopardize the success of such projects. The risks of not meeting the service acquisition's cost, schedule, and performance objectives are, consequently, higher in DoD service projects. As the DoD increases its acquisition of services—particularly in the light of anticipated budget cuts and dwindling resources—the Department must ensure that its service acquisition projects are effectively and efficiently managed.

The lack of a well-developed program management infrastructure for the acquisition of services was a critical research finding that warranted further study. Therefore, our second research project was geared towards studying the program management infrastructure in the service supply chain in the DoD. In this research, too, we conducted two additional in-depth case studies and developed a conceptual model of a service lifecycle that can be used to analyze and design the DoD's services acquisition process. In our project report (Apte & Rendon, 2007), we discussed the program management approach, identified basic project management concepts, described how these concepts are being used in the acquisition of defense weapon systems, and recommended how they can be adapted in the acquisition of services in the DoD.

The program management approach essentially consists of a well-defined, disciplined methodology and infrastructure. The approach also includes a

centralized, coordinated management of project activities. This includes the use of a project lifecycle, integrated processes, and designated managers with project authority, integrated cross-functional teams, and an enabling organizational structure.

Our case studies that examined management of the service supply chain indicated that, in general within the DoD—and specifically in the Air Force—the traditional approach to managing services acquisition does not include a disciplined methodology and infrastructure. Nor does it include a centralized, coordinated management of project activities involving the use of the project lifecycle, a designated project manager, integrated cross-functional teams, and an enabling organizational structure.

However, our research did identify two innovative approaches to managing services acquisition programs. First, the Air Education and Training Command (AETC) approach. The AETC approach incorporates a well-defined, disciplined methodology and infrastructure. Through the use of both the Program Management Flight and AETC Contracting Squadron, the AETC is able to provide centralized, coordinated, pre-award management of services acquisition programs. And although in the post-award management, the AETC approach does not maintain an on-site program manager, it does maintain an on-site administrative contracting officer. Yet, regardless of its success, this situation has the potential to result in disparate and broken communications between all parties involved in managing the services acquisition program.

The second approach is exemplified by Air Combat Command (ACC) model for services acquisition management using the Acquisition Management and Integration Center (AMIC). The AMIC approach includes a well-defined, disciplined methodology and infrastructure, as well as a centralized, coordinated program management approach. This approach is unique in that it provides a cradle-to-grave acquisition approach to services acquisition management. This integrated approach

results in management efficiencies to include an effective process orientation, maximum resource availability and maximum training effectiveness.

2.0 Current Research Focus

The objective of the current (i.e., the third) research project is to develop a more comprehensive understanding of how services acquisition is managed at a wide range of military bases throughout the Department of Defense. This research is focused on answering the following research questions:

1. What type of acquisition strategy, procurement method, and contracts are used in services acquisition?
2. How is the service acquisition process managed? What management concepts—such as a lifecycle, a program management or a project management approach—are used?
3. What training is given to contract and project/program management staff?
4. Are there any significant differences between the way services are acquired and managed in different DoD departments?

2.1 Development and Review of Survey Instrument

The methodology for this current research involves the application of a survey instrument recently developed for this specific purpose. The MBA student team of Compton and Meinshausen, under the guidance of Professors Apte, Apte, and Rendon, developed the survey instrument as part of their MBA research project (Compton & Meinshausen, 2007). This was a web-based survey instrument developed using the survey software, “Survey Monkey.” The developed survey was pilot tested for its validity and was used to collect additional empirical data regarding the current state of services acquisition management in the Navy and the Air Force at the installation level.

The services acquisition research survey begins with questions focusing on specific demographic data for each military department, major command, region, and military installation. The survey then asks specific questions related to the approach, method, and procedures used in the acquisition of services for certain specific categories of services. The specific categories of services targeted in this

research are listed in Table 1 below. These service categories are considered to be the most common services acquired by the various DoD departments. Between FY 1999 to FY 2003, the DoD's spending on these types of services increased by 66%; and in FY 2003, the DoD spent over $118 billion (or approximately 57% of total DoD procurement dollars) on these types of services (GAO, 2005). Table 1 also shows the individual service categories addressed in the responses received from the Air Force and the Navy.

Table 1. Service Categories

Service Category	Classification Code	Air Force	Navy
Professional, administrative, and mgmt. support	R	X	X
Maintenance and repair of equipment	J	X	X
Data processing and telecommunications	D	X	X
Utilities and housekeeping	S		X
Transportation and travel	V	X	

The survey instrument includes core questions related to the methods and procedures used in the acquisition of services for these five categories of services. These core questions focus on the following areas (Compton & Meinshausen, 2007):

Contract Characteristics. The purpose of this category of questions is to gain insight into the dominant procurement method and contract type used in the acquisition of services at the installation level. The contract characteristics examined in this section are degree of competition (competitively bid or sole-source), contract type (fixed-price or cost-type), and type of contract incentive (incentive-fee or award-fee or award-term). A conceptual diagram describing the elements of contract characteristics is shown in Figure 1 below.

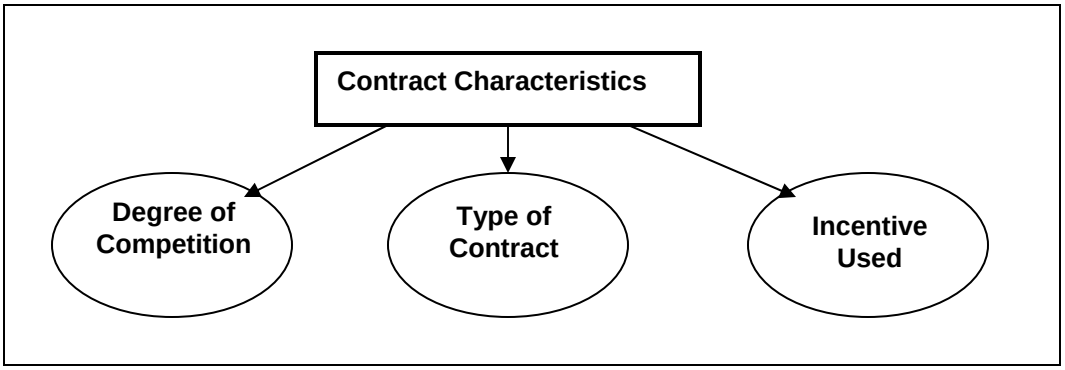

Figure 1. Dominant Procurement Methods

Acquisition Management Methods. The purpose of this broad category of questions is to gain insight into the types of management methods and approaches used in the acquisition of individual services at each phase of the contract management process. A conceptual diagram displaying the elements of this category is given in Figure 2 below. For each of the contract-management phases, the survey asks whether the phase was conducted at a regional, installation, or some other organizational level. This core question category also focused on whether a project-team approach was typically used in the acquisition of the respective service category at the installation level.

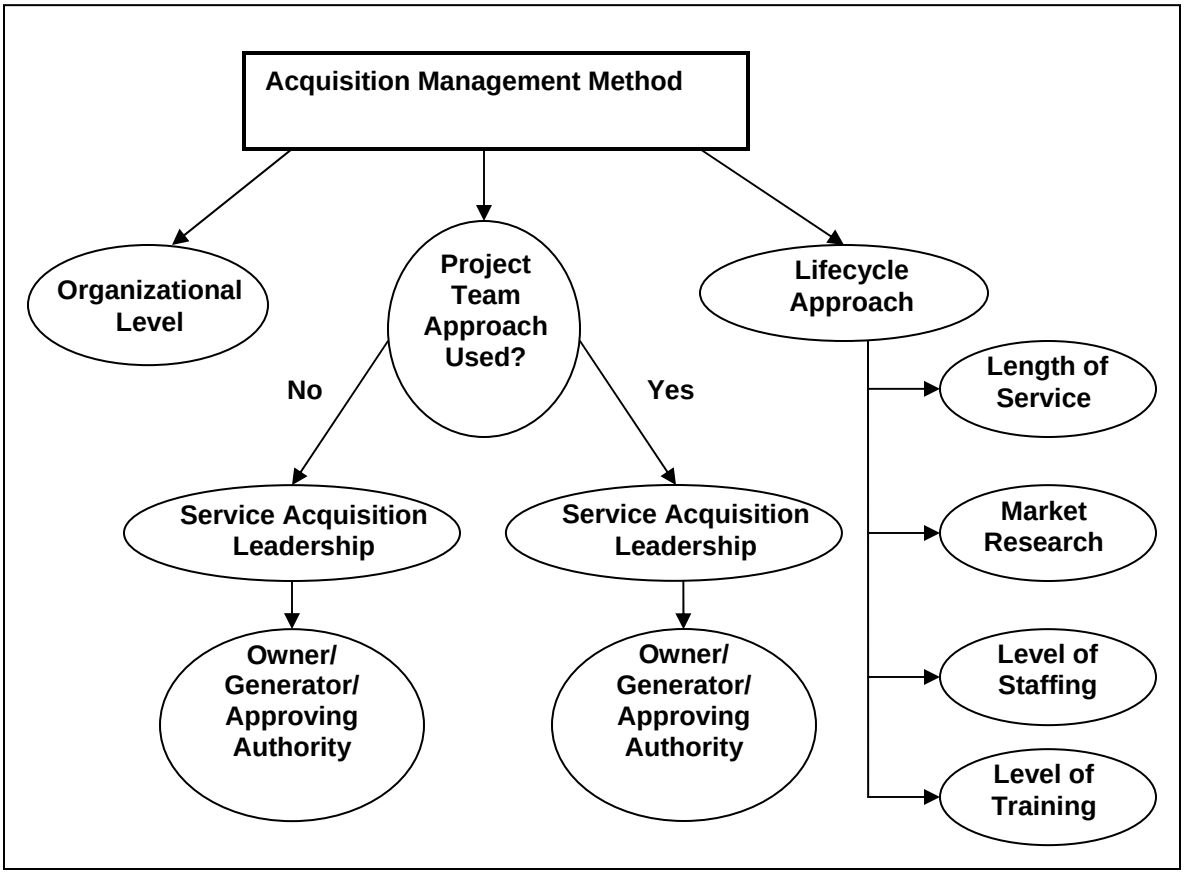

Figure 2. Management Approaches

Project Team Approach. The purpose of this category of questions is to explore the installations that utilize a project team approach in the services acquisition management method described above. The questions explore the position of the services acquisition project team leader, such as a Program/Project Manager or Contracting Officer. This category of questions also explores information on the owner, generator, and approving authority of the requirement for a specific service being acquired. Another purpose of this category of questions is to explore services acquisitions in which a project management approach was not dominantly used. For this case too, the questions explore the position of the person leading the services acquisition, and information on the owner, generator, and approving authority of the requirement.

Other Program Management Issues. This last category of core questions is focused on the use of a lifecycle approach, length of assignments for services acquisition management personnel staff, use of market research techniques, level of staffing in services acquisition management, and level of training of services acquisition management personnel. These questions use a Likert-type scale to measure the level of agreement or disagreement amongst the respondents' statements.

Finally, the survey also solicits feedback and any general comments the respondents may want to share regarding the topic of services acquisition. This survey instrument also allows the researchers to collect data that will be subsequently analyzed to answer the research questions. This research will then require more sophisticated statistical analysis—as discussed in the next section of this paper.

THIS PAGE INTENTIONALLY LEFT BLANK

3.0 Survey Data and Preliminary Observations

The objective of this study, understanding the acquisition of services at diverse military bases, benefits from the collection and analysis of the previously discussed survey responses. Although creating a validated survey instrument that can guide the data collection and help us answer the research questions was a challenging and time-consuming task, this survey has been instrumental in guiding the overall direction of the study.

In this section, we present a summary of the survey data we gathered and present our preliminary observations about the data. Specifically, the data concerning various contract characteristics and acquisition management methods for individual service categories will be presented using the logical structure depicted in Figures 1 and 2. We begin with a description of the Air Force survey results (see Tables 2, 3 and 4). This will be followed by a presentation of the Navy survey results (see Tables 5, 6, and 7). Our conclusions and recommendations based on our study will then be presented in subsequent sections.

3.1 Services Acquisition: Air Force Survey Results

3.1.1 Contract Characteristics

The data on contract characteristics prevalent in various service categories are shown in Table 2 below.

Table 2. Contract Characteristics: Air Force

Service category	Degree of Competition			Contract Type			Contract Incentive		
	Competitive	Sole Source	N/A	Fixed	Cost	N/A	Award Fee	Award Term	N/A
Professional, Administrative, and Management Support									
FY03	62%	6%	32%	59%	9%	32%	9%	0%	91%
FY04	59%	6%	35%	56%	9%	35%	9%	0%	91%
FY05	59%	9%	32%	62%	6%	32%	9%	0%	91%
FY06	71%	9%	21%	71%	9%	21%	12%	0%	88%
FY07	76%	9%	15%	79%	6%	15%	12%	0%	88%
Maintenance and Repair of Equipment									
FY03	65%	6%	29%	68%	3%	29%	3%	3%	94%
FY04	65%	6%	29%	68%	3%	29%	3%	3%	94%
FY05	65%	6%	29%	68%	3%	29%	3%	3%	94%
FY06	76%	6%	18%	79%	3%	18%	3%	6%	91%
FY07	85%	6%	9%	88%	3%	9%	3%	6%	91%
Data Processing and Telecommunication									
FY03	56%	3%	41%	50%	6%	44%	9%	0%	91%
FY04	56%	3%	41%	50%	6%	44%	9%	0%	91%
FY05	56%	3%	41%	50%	6%	44%	9%	0%	91%
FY06	62%	6%	32%	59%	6%	35%	9%	0%	91%
FY07	71%	3%	26%	65%	6%	29%	9%	0%	91%
Transportation and Travel									
FY03	38%	0%	62%	38%	0%	62%	3%	0%	97%
FY04	41%	0%	59%	41%	0%	59%	3%	0%	97%
FY05	38%	0%	62%	38%	0%	62%	3%	0%	97%
FY06	47%	0%	53%	47%	0%	53%	3%	0%	97%
FY07	53%	0%	47%	53%	0%	47%	3%	0%	97%

The responses from the Air Force addressed four service categories: (1) professional, administrative and management support, (2) maintenance and repair of equipment, (3) data processing and telecommunications, and (4) transportation and travel. For each service category, we collected data concerning the degree of competition, contract type and contract incentives used. To uncover salient trends, we requested respondents to provide annual data for the past five years—from FY03 to FY07. Following are some observations about the data. In the interest of brevity, we refer only to the data for FY07.

- Professional, Administrative, & Management Support Services: Based on Table 2, we see that a competitive approach is used 76% of the time, while sole-source is only used 9% of the time. Additionally, fixed-price-type contracts are used 79% of the time, while cost-type contracts are only used 6% of the time. Finally, contract incentives are rarely used in any capacity, only about 12% of the time.

- Maintenance and Repair of Equipment: In Table 2, we note that a competitive approach is used 85% of the time while sole-source is only used 6% of the time consistently. Additionally, fixed-price-type contracts are used 88% of the time, while cost-type contracts are only

used 3% of the time consistently. Contract incentives are rarely used in any capacity, only 9% of the time.

- Data Processing and Telecommunications: Based on Table 2, we see that a competitive approach is used 71% of the time, while sole-source is only used 3% of the time consistently. Additionally, fixed-price-type contracts are used 65% of the time, while cost-type contracts are only used 6% of the time consistently. Contract incentives are rarely but consistently used, only 9% of the time.

- Transportation and Travel: Again, Table 2 suggests that a competitive approach is predominantly used—53% of the time—while sole-source is not used at all. This may be due to the fact that many bases do not purchase transportation within their Contracting Squadron. Another answer to the high N/A (not applicable) number is the fact that contracting squadrons might issue delivery task orders from large indefinite-quantity, indefinite-delivery-type contracts; thereby, the respondents possibly answered not applicable to this question. Additionally, fixed-price-type contracts are used 53% of the time, while cost type contracts were not used at all. Contract incentives are only used 3% of the time consistently.

3.1.2 Acquisition Management Methods

The Air Force typically employs the acquisition of the services at the installation level. The administrative portion of the survey focused on the respondents' branch of service and MAJCOM. All 34 respondents were from the USAF. Out of the 34 respondents, 10 were on location with the Air Combat Command (ACC); 7 respondents were from the Air Mobility Command (AMC); 6 respondents were from the Air Education and Training Command (AETC); 6 respondents were from the Air Force Space Command (AFSPC); 4 respondents were from the Air Force Material Command (AFMC), and, finally, one respondent was from the Air Force Special Operations Command (AFSOC). Our team wanted this survey data to be unbiased, so we made the survey anonymous. However, as a by-product of this anonymity, we do not know the location of the specific bases that answered the survey.

Organizational Level

The survey respondents were asked to state the organizational level at which the specific services were acquired—that is, at what level were the procurement process for the services conducted? The results are shown in Table 3 below. The various DoD components acquire services either at the major command (MAJCOM) level, regional level or installation level. Below are the results of the survey. The responses indicate that during all phases of the services acquisition, for a large majority of the services acquired by the Air Force (in about 70% cases), the procurement was conducted at the installation level.

Table 3. Organization Level Used in Acquisition Phases: Air Force

Service/Acquisition Phase	Organization Level		
	Regional	Installation	N/A
Professional, Administrative, and Management Support			
Acquisition Planning	1	27	6
Solicitation	1	27	6
Source Selection	1	26	7
Contract Administration	0	27	7
Maintenance and Repair of Equipment			
Acquisition Planning	1	29	4
Solicitation	1	29	4
Source Selection	1	27	6
Contract Administration	0	29	5
Data Processing and Telecommunication			
Acquisition Planning	4	21	9
Solicitation	4	21	9
Source Selection	4	19	11
Contract Administration	3	22	9
Transportation and Travel			
Acquisition Planning	2	19	13
Solicitation	2	19	13
Source Selection	2	19	13
Contract Administration	1	19	14

Project Team Approach

The survey results about the use of the project team approach (see Table 4) show that this approach was used in a majority of the acquisitions for all services categories (in about 65% of the cases).

Table 4. Project Team Approach: Air Force

Service Category	Total No. of Organiza-tions	Organizations Using Project Team Approach					Organizations Not Using Project Team Approach				
			Who leads acquisition?		Who owns requirments?			Who leads acquisition?		Who owns requirments?	
		SubTotal	Contracting Officer	Other (PM, QAE)	Contracting Officer	Customer (PM, QAE)	SubTotal	Contracting Officer	Other (PM, QAE)	Contracting Officer	Customer (PM, QAE)
Professional, Administrative, and Management Support	**34**	**25**	21	4	5	20	**9**	8	1	1	8
Maintenance and Repair of Equipment	**34**	**23**	17	6	4	19	**11**	10	1	2	9
Data Processing and Telecommunication	**34**	**21**	12	9	3	18	**13**	7	6	2	11
Transportation and Travel	**34**	**18**	16	2	3	15	**16**	5	11	0	16

Project Team Approach and Service Acquisition Leadership

Regardless of whether the respondents answered yes or no to the utilization of a project team approach question, the respondents were asked the following two questions:

1. Who leads the acquisition of the service category?
2. Who owns the requirements or approves changes to the requirements?

As shown in Table 4, the responses to these questions were relatively similar. In majority of the cases, a contracting officer leads the acquisition process. This clearly indicates that program managers are usually not part of the acquisition process of procuring services at the installation level. Additionally, customers are usually responsible for owning and changing the requirements for services at the installation level.

3.2 Services Acquisition: Navy Survey Results

3.2.1 Contract Characteristics

The data on contract characteristics for various service categories are shown in Table 5 below. Selected observations about FY07 data are stated below.

- Profession, administration, and management: The data showed that in FY07, 90% of contracts were competitively awarded; 80% of contracts were fixed-price contracts, and 90% contracts have no incentives.
- Maintenance and repair equipment: In FY07, 80% of contracts were competitively awarded; 80% percent were fixed-price contracts, and just one contract had an incentive fee attached to it.
- Data processing and telecommunication: In FY07, 33% of the contracts were from a competitive source; 44% percent of the contracts were firm-fixed contracts, and no incentives were offered in any contract.
- Utilities and housekeeping: In FY07, 20% of the contracts administered were competitive, and 40% were sole-source; 60% of the contracts cut were firm-fixed-priced.

Table 5. Contract Characteristics: Navy

	Degree of Competition			Contract Type			Contract Incentive		
	Competitive	Sole Source	N/A	Fixed	Cost	N/A	Award Fee	Award Term	N/A
Professional, Administrative, and Management Support									
FY03	80%	0%	20%	80%	0%	20%	10%	0%	90%
FY04	80%	0%	20%	80%	0%	20%	10%	0%	90%
FY05	80%	0%	20%	80%	0%	20%	0%	10%	90%
FY06	80%	0%	20%	80%	0%	20%	0%	10%	90%
FY07	90%	0%	10%	90%	0%	10%	0%	10%	90%
Maintenance and Repair of Equipment									
FY03	80%	0%	20%	80%	0%	20%	0%	0%	100%
FY04	80%	0%	20%	80%	0%	20%	0%	0%	100%
FY05	80%	0%	20%	80%	0%	20%	0%	0%	100%
FY06	80%	0%	20%	80%	0%	20%	0%	0%	100%
FY07	80%	0%	20%	80%	0%	20%	0%	10%	90%
Data Processing and Telecommunication									
FY03	33%	0%	67%	33%	0%	67%	0%	0%	100%
FY04	33%	0%	67%	33%	0%	67%	0%	0%	100%
FY05	33%	0%	67%	33%	0%	67%	0%	0%	100%
FY06	33%	11%	56%	44%	0%	56%	0%	0%	100%
FY07	33%	11%	56%	44%	0%	56%	0%	0%	100%
Utilities and Housekeeping									
FY03	25%	25%	50%	60%	0%	40%	20%	0%	80%
FY04	25%	25%	50%	60%	0%	40%	20%	0%	80%
FY05	25%	25%	50%	60%	0%	40%	0%	20%	80%
FY06	25%	25%	50%	60%	0%	40%	0%	0%	100%
FY07	20%	40%	40%	60%	0%	40%	0%	0%	100%

3.2.2 Acquisition Management Methods

The data was collected from the survey at the installation level. The data inputs were provided by the Navy Regions in charge of the installations in CONUS. We received inputs from 6 Regions—covering 66 Navy installations plus Naval Supply (NAVSUP) and Naval Medical Logistics Command (NMLC).

Organizational Level

The data regarding the organizational level at which the specific services were acquired is shown in Table 6 below. The majority of the responses indicate that each of the services acquired by the Navy was procured at the regional level—specifically, 62% of the professional, administrative, and management services were acquired at this level. About 68% of the acquisition planning, solicitation and source selection for data processing and telecommunication services were performed at the regional level. The responses for Utilities and housekeeping services showed half of the contracts were planned, solicited, selected, and administered at the regional level, and half at the installation level.

Table 6. Organization Level Used in Acquisition Phases: Navy

Service/Acquisition Phase	Organization Level			Total
	Regional	Installation	N/A	
Professional, Administrative, and Management Support				
Acquisition Planning	5	2	3	10
Solicitation	5	2	3	10
Source Selection	5	3	2	10
Contract Administration	3	4	3	10
Maintenance and Repair of Equipment				
Acquisition Planning	4	3	3	10
Solicitation	4	3	3	10
Source Selection	4	3	3	10
Contract Administration	2	6	2	10
Data Processing and Telecommunication				
Acquisition Planning	3	1	5	9
Solicitation	3	1	5	9
Source Selection	3	1	5	9
Contract Administration	2	2	5	9
Utilities and Housekeeping				
Acquisition Planning	2	2	4	8
Solicitation	2	2	4	8
Source Selection	2	2	4	8
Contract Administration	2	2	4	8

Project Team Approach

The results of our survey (see Table 7) show that a project team approach was used in approximately 50% of the acquisitions for all services categories.

Table 7. Project Team Approach: Navy

Service Category	Total No. of Organiza-tions	Organizations Using Project Team Approach					Organizations Not Using Project Team Approach				
		SubTotal	Who leads acquisition?		Who owns requirments?		SubTotal	Who leads acquisition?		Who owns requirments?	
			Contracting Officer	Other (PM, QAE)	Contracting Officer	Customer (PM, QAE)		Contracting Officer	Other (PM, QAE)	Contracting Officer	Customer (PM, QAE)
Professional, Administrative, and Management Support	**10**	**6**	0	6	2	4	**4**	3	1	1	3
Maintenance and Repair of Equipment	**9**	**5**	4	1	1	4	**4**	4	0	1	3
Data Processing and Telecommunication	**9**	**2**	2	0	1	1	**7**	3	4	1	6
Utilities and Housekeeping	**7**	**5**	4	1	2	3	**2**	1	1	1	1

Project Team Approach and Service Acquisition Leadership

As we examine the results of our survey, we note a 50-50 split in a portion of the data: a program manager leads the acquisition team half the time, and a contracting officer leads the acquisition team half the time. Additionally, we see that there is approximate 30% of the time that a program manager, contracting officer, or customer owns and manages the requirement in these services contracts.

3.3 Program Management Issues for Both the Air Force and the Navy

In addition to the topics mentioned above, our research objective was also to investigate issues related to the personnel involved in and responsible for various aspects of services acquisition management. The issues include use of lifecycle approach, as well as the length, level, and qualifications of personnel in service acquisition management. We also explored the extent of market research used by decision-makers in awarding services contracts. Table 8 below describes the responses from the survey regarding the scope and ability of personnel responsible for service contracts. Responses for both the Air Force as well as the Navy (with the corresponding percent of responses) are given in the same table. (Contracting officer is abbreviated to CO, and Quality Assurance Evaluator is abbreviated to QAE.)

Table 8. Scope and Ability of Personnel Responsible for Service Contracts

	Air Force		Navy	
Who writes and awards contracts to provide services?	CO 100%		CO 100%	
Who is responsible for the surveillance of contractor's performance	QAE/COR 91%		QAE/COR 37.5%	CO 37.5%
What type of training do these personnel receive?	*DAWIA* 41%	Phase I and II 90%	*DAWIA* 41%	Phase I and II 36%
How much time was spent in the QAE position?	12-36 months 79%	Over 36 months 6%	12-36 months 37.5%	Over 36 Months 50%

The survey asked Likert-scale based questions related to the use of a lifecycle approach for routine and non-routine services acquisition, the extent of the use of market research, billets for service acquisition management, and responsibilities of the QAE. These are described in Table 9. Here, the answers are divided in three categories: percent of respondents that disagreed, were neutral, and agreed. Disagreed and agreed categories include those who disagreed or agreed strongly.

Table 9. Lifecycle Approach, Market Research, Billets and Responsibility

	Air Force			**Navy**		
	Disagree	Neutral	Agree	Disagree	Neutral	Agree
Lifecycle Approach	%	%	%	%	%	%
For routine services, this was the dominant strategy.	23.5	21	50	50	25	62
For non-routine services, this was the dominant strategy.	41	23.5	29	0	37.5	50
Market Research						
Market Research was conducted for the acquisition of services.	0	3	97	0	0	100
Services Acquisition Billets						
There are adequate number of staff positions.	59	6	35	37.5	25	25
These positions are adequately filled.	65	9	18	50	12.5	25
These staff members are adequately trained.	9	21	53	12.5	25	50
These staff members are adequately qualified.	9	26.5	65	12.5	12.5	62.5
Responsibility of staff members						
Persons identifying requirement also write the SOW/SOO document.	6	3	91	62.5	12.5	2.5
QAE receive prior formal/documented training.	0	0	100	12.5	12.5	75
QAE submit written requests of performance and quality of work to CO.	9	6	85	12.5	25	62.5
Proper level of oversight is afforded to monitor contractor performance.	*15*	*6*	*79*	37.5	37.5	25

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 Summary of Analysis

This research provided a first look at empirical data related to the acquisition of services within the Department of Defense. The application of the survey to Air Force and Navy acquisition offices provided some real-world data on the characteristics of services contracts (degree of competition, contract/incentive type), various management approaches used (organizational level and project team approach), and other program management issues (use of project lifecycle, length of acquisition personnel service, extent of market research, level of staffing, and training of staffing). Below is a summary of our research findings:

Contract Characteristics

The common contract characteristics reflect the use of competitively awarded fixed-priced contracts. Additionally, contract incentives, or award fees, were typically not used in these services contracts.

Acquisition Management Methods

In terms of acquisition management methods, a clear distinction can be made concerning the organizational levels in which these contracts were managed. For the Air Force, the majority of the procurements are conducted, and contracts are managed, at the installation level. On the other hand, the services contracts for the Navy are managed at the regional level. This difference in organizational levels may provide additional insight into the effectiveness of the Air Force's and Navy's services contract management. The relation of where the contracts are managed to where the services are actually performed may have an impact on the effectiveness of the contract management process.

In terms of the use of a project team approach, another distinction can be made between the Air Force and Navy. The Air Force used a project team approach in managing its services contracts (64%) more than did the Navy (51%). Best practices in contract management reflect the use of project teams—specifically

cross-functional teams—in the management of service procurement projects. Further analysis of the implications of not using a project team approach in Navy contracts should be conducted.

Related to the use of project teams is the issue of who is to lead the acquisition effort at the installation. For Air Force services contracts in which a project team was used, 80% of the respondents stated that the contracting officer lead the acquisition team, while only 20% stated that program personnel led the teams. For Navy services contracts in which a project team was used, 65% of the respondents stated that program personnel lead the acquisition team, while 35% stated that contracting officers led the teams.

These results reflect the precarious situations in which contracting officers find themselves as they manage the services procurement process. Not only are they responsible for managing the contractual aspects of the project, they are also responsible for leading the acquisition team. Most of the acquisition team members are not even part of the contracting organization, nor do they work for the contracting officer. This may be problematic for the success of the contract management effort.

It is also interesting to note that at Air Force installations where a project team is not employed in the acquisition of services, in 73% of the cases, the contracting officer is still responsible for leading the acquisition effort. At Navy installations where a project team is not employed in the acquisition of services, in approximately 100% of the cases, the contracting officer is still responsible for leading the acquisition effort. This situation, in which the contracting officer must lead a coordinated effort (involving technical, financial, and customer personnel) in procuring critical services without the use of a project team, may reflect some of the problems in managing services contracts that were identified by the GAO.

Also related to services acquisition leadership is the issue of who should own and manage the requirement. In this research, the requirement is the specific service that is being procured, for example—operations research services (a specific professional, administrative, or management service) for a DoD agency. It is

important to note that the contract management process and, more specifically, the authorities and responsibilities of the contracting officer do not include requirements-management activities (such as determining the requirement, modifying the requirement, assessing the effectiveness of the requirement). These activities belong to the requirements owner—usually the organization responsible for the function or service being procured. For example, an Air Force civil engineering organization would own and manage the grounds maintenance and custodial services being acquired by the contracting organization for that specific installation.

This research indicated that for Air Force services acquisitions in which project teams were employed, approximately 82% of the respondents stated that program management personnel owned the requirement (as opposed to contracting officers). For Navy services acquisitions in which project teams were employed, approximately 41% of the respondents stated that program management personnel owned the requirement, while approximately 30% of the respondents stated that either the contracting officer or customer owned the requirement. In Air Force services acquisition in which a project team was not used, approximately 85% of the respondents stated that program management personnel owned the requirement. In Navy services acquisition in which a project team was not used, approximately 67% of the respondents stated that customer personnel owned the requirement; approximately 33% of the respondents stated that contracting officers owned the requirement.

It is interesting to note that although program management personnel owned and managed the requirement in these services contracts, we still see contracting officers leading the acquisition effort (80% with project teams and 73% without). These situations—in which contracting officers are leading the acquisition teams although the requirements are owned and managed by program personnel—may prove problematic to the effectiveness of the services acquisition. This could result in the blurring of (or at least a conflict in) the roles and responsibilities of authorities in the acquisition of services and the management of service requirements.

Program Management Issues

The survey responses to the program management questions provide some additional and interesting insight into the acquisition of services by the Air Force and the Navy. These areas include responsibility for surveillance of contractor's performance and time spent performing QAE duties.

It is interesting to note that approximately 38% of the Navy respondents stated that the Contracting officer is responsible for providing surveillance of the contractor's performance. This differs from the Air Force respondents (91%), who stated that the QAE is responsible for contractor surveillance. Surveillance of contractor performance, especially for performed services, requires technical expertise in the service provided. For example, government information technology (IT) specialists should typically monitor the IT contractor performing IT support services. The level of technical expertise in the surveillance of contractor performance should be a concern for ensuring effective contact administration of services contracts. Contracting officers typically do not have the technical expertise needed to effectively perform contractor surveillance. Nor does the CO usually have the requisite expertise to develop the requirements documents (SOO or SOW) or the quality assurance surveillance plan. Thus, the question of "can the CO provide proper surveillance of the contractor" comes into discussion. We will further address this issue in the program management section below.

In the program management related questions, for routine services, over 50% of both Air Force and Navy respondents stated that a lifecycle approach was used. Of note is that only 29% of Air Force (compared to 50% of Navy) respondents stated that the use of a lifecycle approach was used in non-routine services. The use of a life cycle approach should be a concern for ensuring proper project management of non-routine services contract acquisition. Since the services being acquired are of a non-routine nature, one would expect higher levels of uncertainty—and, thus, higher levels of project risk—in the acquisition process for these services. One method for reducing risk is through the use of a project lifecycle—with project phases, gates,

and decision-points for monitoring and controlling the progression of the services acquisition process. Without the use of a project lifecycle, the services acquisition project may be vulnerable to excessive risk in terms of meeting cost, schedule, and performance objectives. This would especially be true in the acquisition of non-routine services.

The majority of both the Air Force and Navy respondents answered the question on the use of market research in the acquisition of services affirmatively. The data—97% (Air Force) and 100% (Navy)—suggest compliance with the requirement in the *Federal Acquisition Regulation* (*FAR*) to conduct market research as the first step in any acquisition. It would be interesting to conduct follow-on research to analyze the extent of documentation supporting the market research activities of these agencies. Recent GAO and Inspector General reports have suggested the lack and sufficiency of market research documentation in DoD..

The survey results also provide some interesting insight into the staffing of services acquisition management billets. These questions focused on the number of billets, staffing of these billets, training of personnel in these billets, and the qualifications of the personnel in these billets. Of special note is that neither the Air Force nor Navy respondents felt there were an adequate number of services acquisition billets; indeed, only 35% and 25% (respectively) responded to the question in the affirmative. Additionally, neither the Air Force nor Navy respondents felt the services acquisition billets were adequately filled; only 18% and 25% (respectively) responded that they were. However, both the Air Force and Navy stated that the services acquisition management personnel were adequately trained (53% and 50%, respectively) and adequately qualified (65% and 62%, respectively).

In terms of the responsibility of the services acquisition personnel, we see some differences between the Air Force and the Navy. In particular, we see strong differences between the Air Force and Navy in who writes the requirement document, such as the SOO or the SOW. For the Air Force, 91% of respondents agreed that the person identifying the services acquisition requirement also writes

the requirement document. On the other hand, only 2.5% of the Navy respondents agreed to this statement. There are also differences of opinion (79%, Air Force, and 25%, Navy) as to whether a proper level of oversight is afforded to monitor the contractor's performance. These results are somewhat related to the question discussed above: "Can the CO provide proper surveillance of the contractor"?

The first area of difference between the two services' respondents (the issues of identifying the requirement versus developing the requirements documents) may indicate a mixing of services acquisition roles and responsibilities. The significance of these activities reflects the distinction between the services acquisition requirements process and contracting process. The purpose of the requirements process is to determine, define, and develop the service requirement that will be acquired—for example, IT support services. Once the requirements agency identifies, develops, and defines the requirement, the contracting office performs the contracting activities to acquire the needed services. The contracting office does not identify or determine the service requirement. Contracting officers, however, may support the development of the requirements documents by providing business and procurement expertise in this area. When these two distinct processes are mixed, blurred, or performed by the same organization or individual, there is a potential for unsuccessful acquisition results, a higher risk of not meeting project objectives, and even the potential for procurement fraud.

The Air Force responses show a strong connection between the two activities of identifying the requirement and developing the requirements documents. Thus, within the Air Force, the requirements organization—where the technical expertise is located—manages these activities. The Navy, on the other hand, apparently separates the process of identifying the requirement from the process of developing the requirements documents. Although the survey does not ask who develops the requirement documents (if different than the requirements identification organization), one may assume that it may be the contracting officer, based on the previous survey question of who writes and awards the services contracts. In this situation, the Navy seems to have the organization with the technical expertise and

responsibility for managing the requirement identifying the services acquisition requirement, and the contracting officer (who is not a technical expert) developing the requirements documents. Thus, within the Navy, the contracting officer not only conducts the contracting activities for the procured services, but also writes the requirements documents that communicate these services to potential offerors. This mixing of roles and responsibilities between requirements and contracting organizations may lead to ineffectiveness in the services acquisition process as well as vulnerabilities for procurement fraud. The question of whether the contracting officer has the requisite technical expertise to develop the SOW for the service requirement, IT support services, for example, raises a critical issue.

This issue of technical expertise is also raised in the survey. One question asks whether a proper level of oversight is afforded to monitor the contractor's performance. In response to this question, the Air Force (79%) differed significantly from the Navy (25%). The strong Air Force response may be linked to the previous statement that the QAE, a technical expert, is responsible for contractor surveillance (91%) while the Navy response is that the contracting officer (37.5%) or the QAE (37.5%) is responsible for surveillance of the contractor's performance. Regardless of inference, the fact that only 25% of the Navy respondents consider contractor oversight to be properly monitored is a strong message regarding the effectiveness of services acquisition management.

THIS PAGE INTENTIONALLY LEFT BLANK

5.0 Recommendations

The majority of the contract administered conformed to the expectation of the researchers. Most service contracts are competitively bid, fixed-priced awards without any incentive. The researchers discovered that the Navy had regionalized most contracting; the contracting officer representative (COR) at the installation submits requirement requests to the regional offices. Table 8 indicates that the CO typically writes and awards the contracts, and the COR (or customer's organization) is responsible for surveillance of those contracts. The majority of the service acquisition personnel have a variety of training, from project management to *DAWIA*.

This initial empirical study on DoD services acquisition reflects that the Air Force and Navy use different contracting approaches—specifically in the following areas: organizational level of acquisition offices (regional versus installation), the use of project teams, leaders of the acquisition effort (program personnel versus contracting officers), and managers of the services requirement (program personnel, contracting officers, and customer organizations). Our research has identified some of the impacts and implications of the different approaches on the effectiveness of the contract management process. Further research should investigate the reasons why the Air Force and Navy use these different approaches and could identify any best practices and lessons learned resulting from the use of these approaches.

THIS PAGE INTENTIONALLY LEFT BLANK

List of References

Apte, U., Ferrer, G., Lewis, I., & Rendon, R. (2006). *Managing the service supply chain in the US Department of Defense: Opportunities and challenges* (Technical Report NPS-AM-06-032). Monterey, CA: Acquisition Research Program, Naval Postgraduate School.

Apte, U., & Rendon, R. (2007). *Managing the service supply chain in the U.S. Department of Defense: Implications for the program management infrastructure* (Technical Report NPS-PM-07-126). Monterey, CA: Acquisition Research Program, Naval Postgraduate School.

Camm, F., Blickstein, I., & Venzor, J. (2004). *Recent large service acquisitions in the Department of Defense.* Santa Monica, CA: RAND National Defense Research Institute.

Compton, J.A., & Meinshausen, B.A. (2007). *The Department of Defense's management of services acquisition: An empirical analysis* (MBA Professional Report). Monterey, CA: Naval Postgraduate School.

Director, Defense Procurement and Acquisition Policy (DPAP). (2007, March 2). *Contracts for services.* Memorandum. Washington, DC: Office of the Under Secretary of Defense (AT&L).

Director, Defense Procurement and Acquisition Policy (DPAP). (2006, August 16). *Government Accountability Office high risk area of contract management.* Memorandum. Washington, DC: Office of the Under Secretary of Defense (AT&L).

GAO. (2002, January). *Best practices: Taking a strategic approach could improve DOD's acquisition of services* (GAO-02-230). Washington, DC: Author.

GAO. (2001, November). *Contract management: Improving services acquisition* (GAO-02-179T). Washington, DC: Author.

GAO. (2005, March). *Contract management: Opportunities to improve surveillance on Department of Defense service contracts* (GAO-05-274). Washington, DC: Author.

GAO. (2005, June). *Defense infrastructure: Issues need to be addressed in managing and funding base operations and facilities support* (GAO-05-556). Washington, DC: Author.

Kerzner, H. (2006). *Project management: A systems approach to planning, scheduling and controlling.* Hoboken, NJ: John Wiley & Sons.

OMB. (2003, May 29). *Performance of commercial activities* (OMB Circular A-76). Washington, DC: Author.

2003 - 2008 Sponsored Research Topics

Acquisition Management

- Acquiring Combat Capability via Public-Private Partnerships (PPPs)
- BCA: Contractor vs. Organic Growth
- Defense Industry Consolidation
- EU-US Defense Industrial Relationships
- Knowledge Value Added (KVA) + Real Options (RO) Applied to Shipyard Planning Processes
- Managing Services Supply Chain
- MOSA Contracting Implications
- Portfolio Optimization via KVA + RO
- Private Military Sector
- Software Requirements for OA
- Spiral Development
- Strategy for Defense Acquisition Research
- The Software, Hardware Asset Reuse Enterprise (SHARE) repository

Contract Management

- Commodity Sourcing Strategies
- Contracting Government Procurement Functions
- Contractors in 21st Century Combat Zone
- Joint Contingency Contracting
- Model for Optimizing Contingency Contracting Planning and Execution
- Navy Contract Writing Guide
- Past Performance in Source Selection
- Strategic Contingency Contracting
- Transforming DoD Contract Closeout
- USAF Energy Savings Performance Contracts
- USAF IT Commodity Council
- USMC Contingency Contracting

Financial Management

- Acquisitions via leasing: MPS case
- Budget Scoring
- Budgeting for Capabilities Based Planning
- Capital Budgeting for DoD
- Energy Saving Contracts/DoD Mobile Assets
- Financing DoD Budget via PPPs
- Lessons from Private Sector Capital Budgeting for DoD Acquisition Budgeting Reform
- PPPs and Government Financing
- ROI of Information Warfare Systems
- Special Termination Liability in MDAPs
- Strategic Sourcing
- Transaction Cost Economics (TCE) to Improve Cost Estimates

Human Resources

- Indefinite Reenlistment
- Individual Augmentation
- Learning Management Systems
- Moral Conduct Waivers and First-tem Attrition
- Retention
- The Navy's Selective Reenlistment Bonus (SRB) Management System
- Tuition Assistance

Logistics Management

- Analysis of LAV Depot Maintenance
- Army LOG MOD
- ASDS Product Support Analysis
- Cold-chain Logistics
- Contractors Supporting Military Operations
- Diffusion/Variability on Vendor Performance Evaluation
- Evolutionary Acquisition
- Lean Six Sigma to Reduce Costs and Improve Readiness

- Naval Aviation Maintenance and Process Improvement (2)
- Optimizing CIWS Lifecycle Support (LCS)
- Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity
- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC Aegis Microwave Power Tubes
- Sense-and-Respond Logistics Network
- Strategic Sourcing

Program Management

- Building Collaborative Capacity
- Business Process Reengineering (BPR) for LCS Mission Module Acquisition
- Collaborative IT Tools Leveraging Competence
- Contractor vs. Organic Support
- Knowledge, Responsibilities and Decision Rights in MDAPs
- KVA Applied to Aegis and SSDS
- Managing the Service Supply Chain
- Measuring Uncertainty in Eared Value
- Organizational Modeling and Simulation
- Public-Private Partnership
- Terminating Your Own Program
- Utilizing Collaborative and Three-dimensional Imaging Technology

A complete listing and electronic copies of published research are available on our website: www.acquisitionresearch.org

THIS PAGE INTENTIONALLY LEFT BLANK

Initial Distribution List

1. Defense Technical Information Center — 2
   8725 John J. Kingman Rd., STE 0944; Ft. Belvoir, VA 22060-6218
2. Dudley Knox Library, Code 013 — 2
   Naval Postgraduate School, Monterey, CA 93943-5100
3. Research Office, Code 09 — 1
   Naval Postgraduate School, Monterey, CA 93943-5138
4. William R. Gates — 1
   Dean, GSBPP
   E-mail: bgates@nps.edu
5. Stephen Mehay — 1
   Associate Dean for Research, GB
   E-mail: smehay@nps.edu
6. Aruna Apte — 1
   Assistant Professor, GB
   E-mail: auapte@nps.edu
7. Uday Apte — 1
   Professor, GB
   E-mail: umapte@nps.edu
8. Rene Rendon — 1
   Associate Professor, GB
   E-mail: rgrendon@nps.edu

Copies of the Acquisition Sponsored Research Reports may be printed from our website www.acquisitionresearch.org